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ABSTRACT

Features of parental speech to young children was studied in four English-speaking and four Spanish-speaking families. Children ranged in age from 9 to 12 months for the English speakers and from 8 to 22 months for the Spanish speakers. Examination of the utterances led to the identification of 34 prosodic, paralinguistic, and interactional features that characterize the speech as parental. Parental utterances were coded for each of the 34 features, and the total number of utterances per parent were considered. Generally, fathers talked less with the children and Spanish-speaking fathers overall participated less than the English-speaking fathers. Overall, there is a high degree of similarity between mother and father speech, but there are clear differences in the rates of some features. The mothers' speech contained comparatively more features that are commonly noted as characteristic of baby talk, while the fathers' speech had comparatively more features that are characteristic of serious speech or of "interaction-repair devices." The features that occurred most frequently in the speech of the parents were "exaggerated intonation," "repetition," "high pitch," "low volume," "lengthened vowel" and "instructional." There are also culturally differentiated sex-specific preferences for feature usage. (SW)

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MOTHER AND FATHER SPEECH:
DISTRIBUTION OF PARENTAL SPEECH FEATURES IN ENGLISH AND SPANISH*

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It is a very inconvenient habit of kittens (Alice had once made the remark) that, whatever you say to them, they always purr. "If they would only purr for 'yes' and mew for 'no' or any rule of that sort," she had said, "so one could keep up a conversation! But how can you talk with a person if they always say the same thing?"

Through the Looking Glass;
Lewis Carroll

Alice's complaint is direct and to the point. Although the relative contributions to conversation may vary considerably, active co-participants are still a necessity. Conversation requires joint action. That precisely is the obstacle that parents face in talking with very young children. Parents devote a sizeable amount of time and energy trying to initiate and to sustain interaction with pre-linguistic children. The conditions are adverse. The children may have limited and minimally controlled attention spans, and they may have little if any proficiency in joint action, almost no linguistic skills, and no conversational facility at all. Faced with such difficult conversational partners, parents must radically alter their communication strategies and their speech patterns.

Perceptual saliency is one of the parental concerns. Linguistic structure is simplified, and redundant cues may be added to the structure to assist children in perception (Ferguson 1964; 1975). Rate of speech is sometimes slower, and utterances are repeated numerous times. However, long before children can process linguistic signals and information, parents attempt to engage children in systematic, i.e. rule-governed interaction (Blount 1972; Lewis and Freedle 1973; Scaife and Bruner 1975). One way to accomplish this is to adapt speech by utilizing special linguistic features

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and interactional devices. The resultant special speech register functions at first only indirectly to promote language acquisition. Its primary and immediate function is to structure interaction, to initiate joint activities with children. In a project designed to identify the types and functions of prosodic and interactional features in parental speech, it was found that some features served to attract children's attention; other features focused attention on the immediate activity (including speech); and still other features introduced (or marked the introduction of) semantically meaningful elements into interaction (Blount and Padgug n.d.; Blount and Kempton n.d.).

Another goal of the project was the identification of typical or characteristic feature usage by mothers and fathers. The present report is concerned with the distributional patterns in mother and father speech in English and Spanish. First, a brief description of the project is necessary.

Tape recordings were made of parental speech to young children in four English-speaking and four Spanish-speaking families in Austin, Texas. The age range of the children was 9;0 - 18;0 months for the English speakers and 8;1 - 13;1 and 18;1 - 22;2 for Spanish speakers. All were children of university students, and none of the children had older siblings. Three of the Spanish-speaking families were from Latin America--one family from Mexico, one from Chile, and one in which the father was from Peru and the mother from Argentina. The fourth family was native to Texas.

Efforts were made to record under as natural conditions as possible. At the beginning of the project, we repeatedly emphasized in discussions with the parents the necessity of samples of natural conversations. The parents were encouraged to record conversations with their children that were typical of everyday interactions and they were requested to avoid staged productions that would be unrepresentative of children's interactional capacities. All the families reported that there were special times of the day when they were most likely to interact with the children, and they attempted to record during those times. Observers were not present during the recording sessions.

A tape recorder was left with each family for a 24-hour period, ideally every week (on some occasions recordings were made only every two or three weeks). During the 24-hour period, parents would tape approximately 30-45 minutes of interaction. A minimum of ten recordings was made for each child. A summary of the sessions, numbers of mothers' and fathers' utterances, and ages of the children is given in Table 1 (a and b).

An utterance was defined as parental speech offset by children's utterances or by pauses--i.e., interactional turn-taking was the structural criterion. Whatever occurred verbally in a turn was one utterance, whether it was a monosyllabic nonsense form or several sentences.

Examination of the utterances by native speakers of English and Spanish led to the identification of thirty-four prosodic, paralinguistic, and interactional features that characterize the speech as parental. The judgmental

Table 1a: Parental Speech - English: Number of Parental Utterances, ages of children, number of sessions

MIRANDA (f)					JEANNE (f)				
Session	Age	Mo	Fa	Total	Age	Mo	Fa	Total	
I	9;0	96	6	104	11;0	161	0	161	
II	9;1	241	11	252	11;1	112	0	112	
III	9;2	113	19	132	11;2	3	247	250	
IV	10;0	72	0	72	11;3	53	153	200	
V	10;1	19	0	19	11;4	74	176	250	
VI	10;2	131	5	136	12;0	102	148	250	
VII	10;3	67	7	74	12;2	95	155	250	
VIII	11;2	84	0	84	12;3	185	65	250	
IX	12;0	149	38	187	13;0	142	110	252	
X	12;2	179	9	188	13;1	123	45	168	
XI	12;3	106	25	131		1050	1098	2149	
XII	12;4	138	29	167					
XIII	13;0	52	4	56					
		1449	153	1602					

REBECCA (f)					ADAM (m)				
Session	Age	Mo	Fa	Total	Session	Age	Mo	Fa	Total
I	14;0	50	0	56	I	15;0	173	55	228
II	14;1	58	7	65	II	15;1	178	3	181
III	14;2	14	0	14	III	15;2	206	46	252
IV	14;3	14	0	14	IV	15;3	227	23	250
V	14;4	13	0	13	V	16;0	167	83	250
VI	15;0	74	57	131	VI	16;2	217	33	250
VII	15;1	5	95	100	VII	16;3	200	51	251
VIII	15;2	82	18	100	VIII	16;4	252	0	252
IX	15;3	49	7	56	IX	17;0	250	1	251
X	16;0	25	23	48	X	17;3	208	0	208
XI	16;1	9	91	100	XI	18;0	241	9	250
XII		399	298	697	XII	18;1	195	55	250
XIII					XIII	18;2	229	21	250
							2743	380	3123

Table 1b: Parental Speech - Spanish: Number of parental utterances, ages of children, number of sessions

VALENTE (m)					ANALISA (f)				
Session	Age	Mo	Fa	Total	Session	Age	Mo	Fa	Total
I	8;1	105	0	105	I	10;4	249	1	250
II	8;2	107	0	107	II	11;0	50	0	50
III	8;3	70	0	70	III	11;1	44	15	59
IV	8;4	73	4	77	IV	11;2	34	31	65
V	9;0	78	0	78	V	11;3	38	18	56
VI	9;1	54	9	63	VI	11;4	32	24	56
VII	9;2	39	6	45	VII	12;0	34	8	42
VIII	9;3	67	0	67	VIII	-	-	-	-
IX	9;4	60	0	60	IX	-	-	-	-
X	10;0	60	0	60	X	-	-	-	-
XI	10;1	69	18	87	XI	12;4	46	0	46
XII	10;2	68	7	75	XII	13;1	48	0	48
XIII	10;3	63	9	72	XIII		575	97	672
XIV	10;4	77	18	95					
		990	71	1061					

CHRISTIAN (m)					LUIS (m)				
Session	Age	Mo	Fa	Total	Session	Age	Mo	Fa	Total
I	18;1	47	7	54	I	20;0	227	0	227
II	18;2	111	16	127	II	20;1	241	9	250
III	18;3	119	15	134	III	20;2	35	0	35
IV	18;4	41	0	41	IV	20;3	37	0	37
V	19;0	75	19	94	V	20;4	28	0	28
VI	19;1	130	0	130	VI	21;0	32	0	32
VII	19;2	19	81	100	VII	21;1	75	0	75
VIII	19;3	0	66	66	VIII	21;2	40	0	40
IX	19;4	0	74	74	IX	21;3	71	0	71
X	20;0	90	15	105	X	21;4	56	0	56
XI	20;1	90	0	90	XI	22;0	51	0	51
XII					XII	22;2	29	2	31
		722	293	1015			922	11	933

criterion was appropriateness of the speech to children and inappropriateness to adults, except in cases with a specialized speech function, such as sarcasm. A list of the 34 features is given in Table 2 (next page).

Several of the features are common in descriptions of baby talk and parental speech; others require elaboration. Phonetic alteration refers to processes such as labialization, palatalization, vowel raising and centralization. Phonetic substitution includes cases such as [w] substituted for [r] (e.g., wabbit for rabbit). Lengthened and shortened consonants refer to nasals (and fricatives). Tempo refers to rate of speech.

All of the features in the interaction category require some comment. Instructional is the most difficult to define. It refers to a quality of speech marked with sustained, even intonation and heavy stress, and it conveys the information that the utterance is to be especially attended. The feature Hmm? includes instances of monosyllabic nasal question particles [hmm], [ʔnn], [hnn]. Attentionals are items such as "hey!" "Look!" and Spanish oye! 'hear' and mira! 'look at!' and personal names. Turn substitution refers to parent adoption of a child's turn in an interaction round. When a parent repeats his/her own utterance, the behavior is repetition; when a child's utterance is repeated, the result is imitation. Interpretation refers to parental assignment of meaning to a child's preceding utterance when it was not clear that the meaning was intended by the child, as e.g., in the response "Yes, that's candy" to a child's [dae:].

The parental utterances were coded for each of the 34 features.¹ If a feature occurred at least once in an utterance, it was scored as present, otherwise as absent. Multiple occurrences of a feature in an utterance were thus not individually scored. The present/absent rate provided a rate measure, not an absolute frequency of occurrence for the features.

To consider differences between mother and father speech, the total number of utterances per parent is considered. From Table 1, we can see that in two English-speaking families, the total number of utterances by the fathers was considerably lower than those for the mothers (Miranda: Mo. 90.5%, Fa 9.5%; Adam: 87.8%, 12.2%). In the other two families, the rates were approximately even (Jeanne: 48.9%, 51.1%; Rebecca: 51.2%, 48.8%). Among the Spanish-speaking families, the fathers participated less than the mothers by considerable margins (Valente: 93.8%; 6.7%; Analisa: 85.6%, 14.4%; Christian: 71.1%, 28.9%; Luis: 98.8%, 1.2%). In general, fathers talked less with the children (5 of 8 contributed less than 15%), and Spanish-speaking fathers overall participated less than their English-speaking counterparts. Given the lack of controls and standardization of the recording sessions, no firm conclusions, however, can be drawn from these figures.

More revealing is an examination of the comparative rate measures of the features. The composite rates (i.e., the total number of occurrences for each feature divided by the total number of mother and of father utterances) are given in Table 2. Overall there is a high degree of similarity

¹ The coders were graduate students in linguistic anthropology at the University of Texas.

Table 2: Number of feature occurrences and rate measures

Feature	ENGLISH				SPANISH			
	#	MO	Rate	FA	#	MO	Rate	FA
1. Breathiness	1824	32.33	564	29.22	317	13.86	20	4.34
2. Breath Held	68	1.21	148	7.67	2	0.09	1	0.22
3. Whisper	170	3.01	60	3.11	79	3.45	8	1.74
4. Lowrd. Volume	1435	25.44	453	23.47	545	23.83	130	28.20
5. Raised Volume	206	3.65	86	4.46	509	22.26	163	35.36
6. Falsetto	654	11.59	62	5.21	249	10.89	31	6.72
7. High Pitch	1690	29.96	340	17.62	652	35.73	152	32.97
8. Low Pitch	294	5.21	250	12.95	109	4.77	54	11.71
9. Exagg. Int.	3881	68.80	1390	72.02	1216	53.17	188	40.78
10. Singing	3	0.05	0	0.00	35	1.53	18	3.90
11. Phonetic Alt.	124	2.20	142	7.36	64	2.80	10	2.17
12. Creaky Voice	736	13.05	339	17.56	104	4.55	18	3.90
13. Tenseness	463	8.21	346	17.93	60	2.62	3	0.65
14. Nasality	25	0.44	30	1.55	0	0.00	0	0.00
15. Rounding	211	3.74	118	6.11	69	3.02	0	1.30
16. Phonetic Subst.	7	0.12	1	0.05	2	0.09	0	0.00
17. Length. Vowel	1439	25.51	265	13.73	558	24.40	65	14.10
18. Length. Cons.	41	0.73	39	2.02	34	1.49	34	7.39
19. Shortnd Vowel	74	1.31	31	1.61	48	2.10	9	1.95
20. Shortnd Cons.	30	0.53	44	2.28	19	0.83	5	1.08
21. Slow Tempo	285	5.05	65	3.37	377	20.06	125	27.11
22. Fast Tempo	183	3.24	116	6.01	298	16.33	96	20.82
23. Sp.Lex.Item	597	10.58	105	5.44	161	7.04	11	2.39
24. Nonsense Form	344	6.10	90	4.66	256	11.02	21	4.56
25. Pers.Pron.Sub.	193	3.42	112	5.80	400	17.50	26	5.64
26. Grammat.Dev.	61	1.08	39	2.02	103	4.50	12	2.60
27. Tag Q.	110	1.95	31	1.61	28	1.22	6	1.30
28. Instructional	661	11.72	309	10.01	670	29.30	140	30.37
29. Hmm?	237	4.20	134	6.94	418	18.28	166	36.01
30. Attentional	155	2.75	92	4.77	548	30.03	123	26.68
31. Turn Subst.	62	1.10	24	1.24	72	3.15	2	0.43
32. Repetition	1378	24.43	569	29.48	1266	55.36	293	63.56
33. Imitation	433	7.68	136	7.05	185	8.00	59	12.80
34. Interpretation	336	5.96	100	5.18	242	10.58	111	24.08
		MO: N =5641	FA: N =1930		MO: N =2287		FA: N =461	

between mother and father speech. In English, exaggerated intonation has the highest rate for both mothers and fathers (68.80 and 72.02 respectively); breathiness is second for mothers (32.33), third for fathers (29.22); and low volume and repetition have high and similar rates. There are, however, clear differences in some feature rates. Mothers have higher rates especially for falsestto, high pitch, lengthened vowel, and special lexical items. Fathers have higher rates for breath held, low pitch, creaky voice, phonetic alteration, tenseness, and instructional. For the moment, we note simply that the mothers' speech contains comparatively more of those features that are commonly noted as characteristic of baby talk, while the fathers' speech has comparatively more features that are characteristic of serious speech.

In Spanish, both mothers and fathers have high (and similar) rates for high pitch (35.73 and 32.97), instructional (29.30 and 30.37), attentionals (30.03 and 26.68) and lowered volume (25.83 and 28.20). Features showing particularly higher rates for mothers are breathiness, exaggerated intonation, lengthened vowels, nonsense forms, and personal pronoun substitution. Fathers use more raised volume, slow tempo, fast tempo, Hmm?, instructional, and interpretation. Again, the mothers' speech adheres more closely to standard aspects of baby talk. In contrast, the fathers' speech contains comparatively more features that are "interaction-repair devices" (i.e., "here are the instructions again, louder and slower/faster").

To gain a clearer picture of the composite profiles, we can consider a ranking of the twelve most frequently occurring features. From Table 3, we can see the English-speakers share nine of the twelve ranked features.

Table 3: Ranked composites; 12 most frequent features

<u>MO-Eng.</u>	<u>FA-Eng.</u>
1. Exaggerated Intonation	Exaggerated Intonation
2. Breathiness	Repetition
3. High Pitch	Breathiness
4. Length. Vowel	Low Volume
5. Low Volume	Tenseness
6. Repetition	High Pitch
7. Creaky Voice	Creaky Voice
8. Instructional	Instructional
9. Falsetto*	Length. Vowel
10. Special Lex. Item*	Low Pitch*
11. Tenseness	Breath Held*
12. Imitation*	Phonetic Alteration*
<u>MO-Span.</u>	<u>FA-Span.</u>
1. Repetition	Repetition
2. Exaggerated Intonation	Exaggerated Intonation
3. High Pitch	Hmm?
4. Attentionals	Raised Volume
5. Instructional	High Pitch
6. Length. Vowel	Instructional
7. Low Volume	Low Volume
8. Raised Volume	Slow Tempo
9. Slow Tempo	Attentionals
10. Hmm?	Interpretation*
11. Personal Pron. Subst.*	Fast Tempo
12. Fast Tempo	Length. Vowel

* Unique features among the four categories

The Mothers' profile shows false (9th) and special lexical items (10th) and imitation (12th) as the non-shared features, whereas the fathers' profile shows low pitch (10th), breath held (11th), and phonetic alteration (12th). Again, these usages contrast on a nurturant/non-nurturant dimension. Differences in the rank order illustrate the same point. Fathers rely more on repetition (2nd v. 6th) and tenseness (5th v. 11th), and mothers use more high pitch (3rd v. 6th) and lengthened vowel (4th v. 9th).

The Spanish-speaking parents share eleven of the top ranked features. The only exceptions are personal pronoun substitution for mothers and interpretation for fathers. The internal rankings for Spanish reveal greater reliance on attentionals by mothers and on Hmm? and raised volume by fathers. The patterns indicate that the fathers are more likely to use features that attempt to elicit semantically meaningful interaction. Mothers rely more on features that elicit interaction based on affect and nurturance.

The composite scores collapse several dimensions of the parental speech. Family or individual preferences and developmental trends are possibly obscured by those measures, or, to the contrary, could distort them. Also no weighting was applied to compensate for the smaller sample size of some individuals. As a counter to those issues, it is necessary to consider the individual records, for the twelve most frequent features used by each parent (See Appendix).

Among the English-speaking parents, there is a high degree of similarity of individual ranks and the composite rank. Variation is confined primarily to the lowest three items. The features identified as characteristic of mother's speech are shared in the ranking by all four mothers, except for false and special lexical item, and three of the four share them. For the fathers, tenseness, low pitch, breath held and phonetic alteration are all problematic. Only two fathers show shared rankings of tenseness, low pitch and phonetic alteration, and three of four do not share breath held.

The Spanish-speaking mothers also reflect a high degree of similarity in rankings. Two of them show only one rank difference: fast tempo (12) in one case, slow tempo (9) in the other. The third mother shows an absence of personal pronoun substitution (11) and fast tempo (12), while the fourth has the most variation: an absence of high pitch (3), slow tempo (9), and Hmm? (10).

The Spanish-speaking fathers, like their wives, show variation in the individual vs. composite ranking primarily among the lowest three feature ranks. One father does not include interpretation (12) and lengthened=vowel (12); another does not show slow tempo (9) and interpretation (12) and the third lacks only lengthened vowel (12). Only one sex specific feature is problematic; interpretation is not ranked in two of three cases.

The relatively high rate of interpretation in the speech of the third father may reflect a developmental pattern. The rate is also high for the mother of the oldest child (Luis), suggesting that the feature is more

likely to be used with older children but that it is not sex-differentiated in use. In the English sample, interpretation is also high for the oldest child, Adam.

The comparison of individual with composite rankings reveals uniformity especially among the mothers' usages, including those features that tend to differentiate their speech from the fathers'. The features characteristic of fathers' speech showed less uniformity. A second procedure was used to measure the distribution patterns of mother and father speech.

The composite rates and rank indicated, as we have seen, that several features were characteristic of the speech of each category, mother-father, English-Spanish. The records of each parent were compared, using those characteristic features. First, the rank of each feature was compared with that of the opposing category (sex). Falsetto, for instance, ranked higher in Miranda's mother's speech than in her father's, as we would expect since falsestto is characteristic of mothers' speech. The rate measure for each feature was compared in the same manner. Results are given in Table 4 (next page).

We can see that the features which best differentiate mothers' from fathers' speech in English are lengthened vowel, falsestto and high pitch. Repetition, imitation, and special lexical item also have strong scores, especially on comparative rate measures. The fathers' speech is best characterized by low volume and creaky voice, and secondarily by instructional, breath held and low pitch. Tenseness and phonetic alteration were positive for only two parents. Their high composite scores is a consequence of high usage rates by one father, who was the most prolific speaker among the fathers.

In the Spanish-speaking sample, lengthened vowel, personal pronoun substitution and exaggerated intonation best characterize the mothers' speech. Among the fathers, raised volume and fast tempo are the characteristic features. Interpretation is weakly characteristic, and as noted, may reflect a developmental trend. Slow tempo, Hmm?, and instructional reflect individual peculiarities and are not common to the sample.

We are now in a position to summarize the evidence and findings. The following features have high occurrence rates in the speech of the majority of the parents--exaggerated intonation, repetition, high pitch, low volume, lengthened vowel and instructional. These features are definitive of parental speech primarily because of the demands placed on parent-infant interaction. Parents must first attract an infant's attention, and since infants can distinguish pitch, tone, and volume differences long before they can make semantic distinctions, prosodic exaggeration is abundant in parental speech. A second interaction requirement is that attention, once obtained, be focused, and the high usage of repetition and instructional are consistent with that task.

The speech features represent multiple devices for the interactional tasks, and parental utterances are marked with several features (an average of 3.31 for English and 4.35 for Spanish). There are cultural preferences for some features. Spanish-speakers rely more on repetition than

Table 4: Comparison of individual rank and rate measures for features characteristic of mother and father speech

ENGLISH features	MOTHERS			
	Miranda rank/rate	Rebecca rank/rate	Jeanne rank/rate	Adam rank/rate
Falsetto	+/+	+/+	+/+	x/+
Spec. Lex. Item	+/+	x/-	+/+	-/+
High Pitch	-/+	+/+	+/+	=/+
Length. Vowel	+/+	+/+	+/+	+/+
Repetition	+/+	+/+	-/-	-/+
Imitation	x/+	+/-	+/+	+/+

FATHERS				
Tenseness	x/-	+/+	+/+	-/-
Low Pitch	x/-	x/+	+/+	+/+
Breath Held	x/+	x/-	+/+	+/+
Phonetic Alt.	+/+	x/o	+/+	x/-
Instructional	+/+	+/+	-/=	-/-
Creaky Voice	+/+	+/+	+/+	=/-
Low, Volume	+/-	+/+	=/+	=/+

SPANISH	MOTHERS		
	Valente	Analisa	Christian
Length. Vowel	+/+	+/+	+/+
Breathiness	x/o	+/+	x/-
Exagg. Inton.	+/+	=/+	+/+
Nonsense Forms	=/+	-/-	x/+
Pers. Pron. Subs.	+/+	+/+	+/+

FATHERS			
Interpretation	x/-	x/+	+/+
Raised Volume	+/+	+/+	+/+
Slow Tempo	+/+	x/-	-/-
Fast Tempo	+/+	+/+	+/+
Hum?	+/-	-/-	+/+
Instructional	-/-	-/-	=/+

- + rank order/rate measure higher for speaker category than opposite sex
- rank order/rate measure lower for speaker category than opposite sex
- x feature not ranked among first twelve features
- = rank order same for mother and father
- o no occurrences of the feature

English-speakers do, whereas, the latter rely more on low volume than their Spanish-speaking counterparts. Spanish-speakers especially use more attentionals, raised volume, slow and fast tempo, and Hmm?, whereas English-speakers use comparatively more paralinguistic features, breathiness, tenseness, and creaky voice.

There are also culturally differentiated sex-specific preferences for feature usage. English-speaking mothers use especially higher rates for lengthened vowels, falsestto, and high pitch and secondarily for special lexical items, imitation and repetition. In contrast, the fathers' speech is marked more by low volume, low pitch, creaky voice, and breath held. Spanish-speaking mothers prefer lengthened vowel, exaggerated intonation, personal pronoun substitution and to a lesser degree nonsense forms. The fathers use more raised volume, fast tempo and interpretation. Two general points remain. Mothers' parental speech is more consistently defined than the fathers' (in both languages), as one would expect, given their traditional roles in child socialization. Mothers' speech also shows preferences for features that tend to be associated with nurturant relationships, whereas fathers' speech has comparatively more features that mark interaction as meaningful in terms of semantic content.

The claims about differential mother and father speech relate to speech registers, not to actual differences in nurturance. Parental behavior obviously includes more than speech, and various communication modalities such as sight and touch would have to be included in an analysis of sex-differentiated nurturant patterns. Sex-differentiated speech registers are, however, maintained, despite the fact that the parental speech occurs in 'care-giving' situations. It would be expected that male speech would assume some feminine characteristics because of the cultural role expectations (Sachs 1975:169), and the present study indicates that such characteristics are indeed present, as witnessed by high rates of exaggerated intonation and high pitch. Yet the fathers used comparatively more features that are characteristic of male speech. The composite profiles for mother and father speech show differences that are consistent with other accounts of male and female speech registers. Those studies show that feminine-role speech tends to have higher pitch levels, greater intonational movement, and is thought to be less forceful than masculine-role speech, which tends to be low in pitch and volume (Addington 1968; Austin, 1965; Berko-Gleason 1975; Kramer 1974; Sachs et al 1973).

An analysis has not yet been made of the effects of mother and father speech on the behavior of children in this study. Since the goal of much of the parental activity was to attract the children's attention and to focus their activity, it is not likely that their speech was serving directly as a model for child acquisition of speech characteristics. More likely the speech was a model for establishing joint activity, and a first step in analysis would be a measure for success rate of mother and father speech in initiating parent-child interaction.

Appendix

A) Individual composite ranked features and rate measures: English

Mother		MIRANDA	Father	
1.	Exagg. Inton.	69.57	Exagg. Inton.	45.10
2.	Repetition	28.78	Instructional	20.92
3.	Length. Vowel	28.38	High Pitch	19.61
4.	High Pitch	26.64	Repetition	18.95
5.	Breathiness	24.36	Breathiness	13.72
6.	Falsetto	19.53	Creaky Voice	11.76
7.	Spec. Lex. Item	16.43	Low. Volume	11.11
8.	Instructional	16.15	Length. Vowel	8.50
9.	Low. Volume	16.01	Attentionals *	7.19
10.	Nonsense Forms *	12.08	Falsetto *	7.19
11.	Creaky Voice	9.39	Phonetic Alt.	6.54
12.	Rounding *	7.59	Spec. Lex. Item *	6.54

Mother		REBECCA	Father	
1.	Exagg. Inton.	69.97	Exagg. Inton.	87.92
2.	High Pitch	31.33	Instructional	31.88
3.	Repetition	23.81	Tenseness	22.15
4.	Length. Vowel	23.06	Breathiness	20.74
5.	Breathiness	21.05	Creaky Voice	18.12
6.	Instructional	20.80	Length. Vowel	18.12
7.	Falsetto	17.29	Interpretation *	17.45
8.	Creaky Voice	12.78	Low. Volume	17.11
9.	Tenseness	10.78	Short. Consonant *	14.77
10.	Slow Tempo *	8.27	Repetition	12.08
11.	Low. Volume	6.77	High Pitch	12.08
12.	Fast Tempo *	6.27	Length. Conson. *	11.74

* not included among the twelve ranked composites

Mother		JEANNE	Father	
1.	Exagg. Inton.	71.81	Exagg. Inton.	75.16
2.	Breathiness	38.29	Repetition	40.58
3.	High Pitch	36.19	Breathiness	30.76
4.	Repetition	29.52	Tenseness	23.02
5.	Length. Vowel	23.90	Creaky Voice	20.38
6.	Falsetto	14.86	High Pitch	19.56
7.	Low. Volume	12.19	Low. Volume	18.11
8.	Instructional	11.38	Low Pitch	17.20
9.	Creaky Voice	11.05	Instructional	15.10
10.	Spec. Lex. Item	10.29	Length. Vowel	13.10
11.	Low Pitch *	9.62	Phonetic Alt.	11.74
12.	Imitation	9.14	Breath Held	11.56

Mother		ADAM	Father	
1.	Exagg. Inton.	67.12	Exagg. Inton.	61.32
2.	Low. Volume	38.21	Low. Volume	49.74
3.	Breathiness	35.91	Breathiness	37.89
4.	High Pitch	29.13	High Pitch	15.53
5.	Length. Vowel	25.01	Repetition	15.76
6.	Repetition	20.07	Length. Vowel	14.21
7.	Creaky Voice	15.79	Creaky Voice	11.32
8.	Tenseness	10.57	Low Pitch	10.79
9.	Imitation	9.52	Spec. Lex. Item *	7.63
10.	Interpretation *	9.08	Interpretation *	7.11
11.	Spec. Lex. Item	8.93	Whisper *	6.84
12.	Instructional	8.20	Imitation *	6.58

* not included among the twelve ranked composites

B) Individual composite ranked features and rate measures: Spanish

VALENTE				
Mother		Father		
1.	Repetition	46.36	Raised Volume	43.66
2.	Exagg. Inton.	44.34	Attentionals	26.76
3.	Attentionals	28.66	Fast Tempo	23.94
4.	Instructional	28.18	Repetition	22.54
5.	Pers. Pron. Subs.	27.37	Low Volume	16.90
6.	Nonsense Forms *	23.84	Nonsense Forms *	12.68
7.	Raised Volume	21.41	Instructional	12.68
8.	High Pitch	20.05	Hmm?	12.68
9.	Low Volume	19.80	High Pitch	11.27
10.	Hmm?	19.70	Exagg. Inton.	9.86
11.	Fast Tempo	18.77	Slow Tempo	8.45
12.	Length. Vowel	14.14	Spec. Lex. Item *	8.45

ANALISA				
Mother		Father		
1.	Repetition	66.96	Repetition	68.04
2.	Exagg. Inton.	53.91	Exagg. Inton.	43.30
3.	Attentionals	51.69	Raised Volume	30.93
4.	Length. Vowel	41.39	Attentionals	19.59
5.	Instructional	33.74	Fast Tempo	18.56
6.	Raised Volume	22.43	Instructional	17.53
7.	Low Volume	19.83	Low Volume	13.40
8.	Fast Tempo	18.46	High Pitch	12.37
9.	Pers. Pron. Subs.	16.17	Length. Vowel	12.37
10.	Hmm?	13.74	Pers. Pron. Subs. *	11.34
11.	High Pitch	13.54	Nonsense Forms	10.31
12.	Breathiness *	10.78	Hmm?	9.28
			Low Pitch	9.28

* not included among the twelve ranked composites

CHRISTIAN				
Mother		Father		
1.	Exaggerated Inton.	64.68	Repetition	72.01
2.	High Pitch	62.60	Hmm?	50.51
3.	Repetition	58.45	Exagg. Inton.	47.44
4.	Slow Tempo	45.98	High Pitch	45.05
5.	Low. Volume	32.55	Slow Tempo	39.93
6.	Instructional	27.29	Instructional	38.91
7.	Length. Vowel	24.93	Low. Volume	35.84
8.	Raised Volume	23.27	Interpretation	35.84
9.	Interpretation	22.30	Raised Volume	34.81
10.	Attentionals *	21.75	Attentionals	29.01
11.	Hmm?	19.94	Fast Tempo	20.82
12.	Falsetto *	18.28	Imitation *	18.77

		LUIS		
Mother			Father	
1.	Exagg. Inton.	59.87	(sample size too small for inclusion)	
2.	Repetition	40.02		
3.	Fast Tempo	30.62		
4.	Pers. Pron. Subs.	28.85		
5.	Interpretation *	25.49		
6.	Attentionals	21.15		
7.	Low. Volume	18.87		
8.	Raised Volume	17.90		
9.	Instructional	17.68		
10.	Length. Vowel	15.94		
11.	Imitation *	15.62		
12.	Creaky Voice *	15.08		

* not included among the twelve ranked composites

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